CHAPTER 13: CUTTER SECTION

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1. Theory of Operation

1. Cutter Home Positioning Mechanism

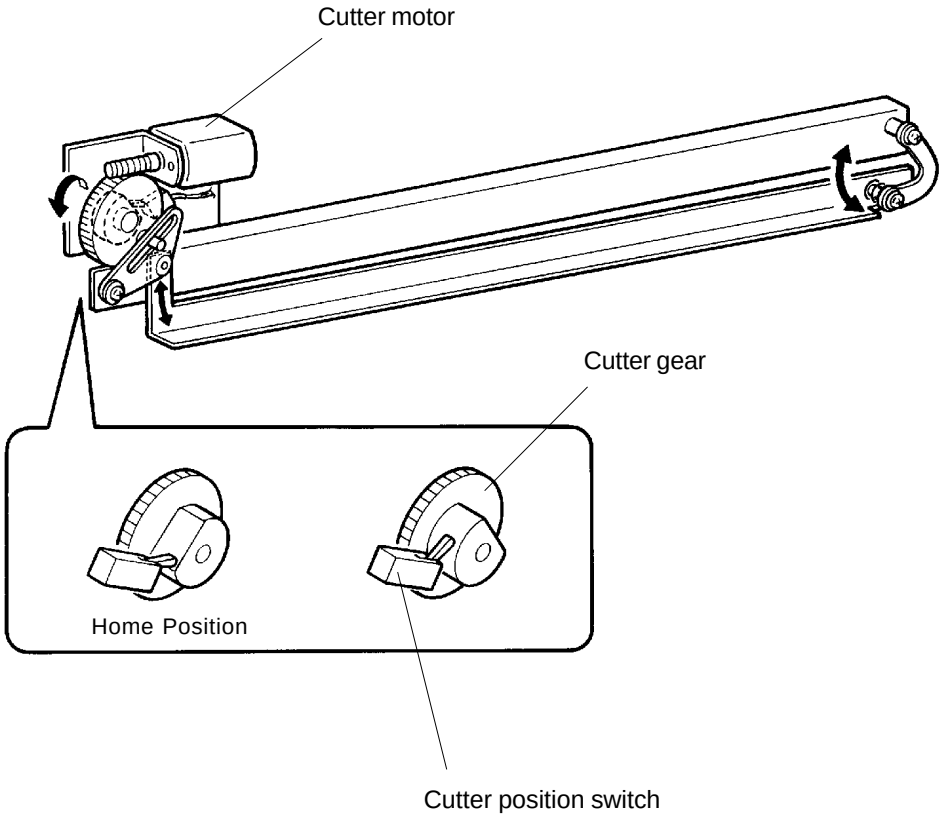
1. Cutter Position Switch

> Each time the machine power is turned ON or All Reset Button is pressed, the Cutter switch checks the Cutter.

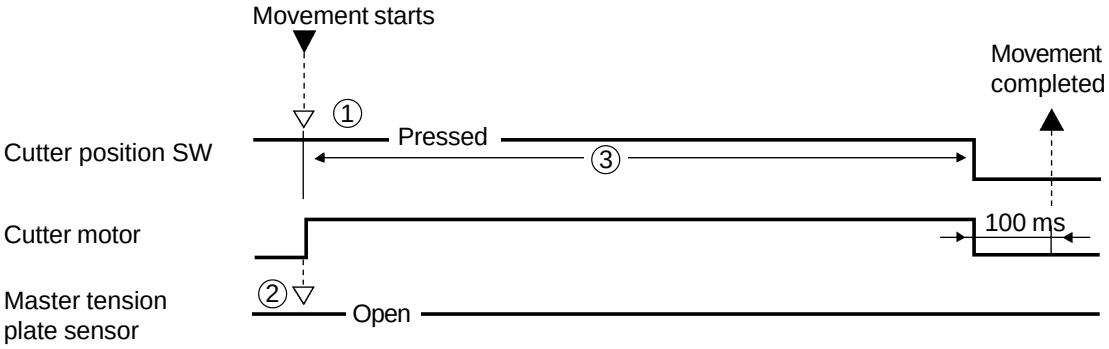
2. Home Position

> The home position of the Cutter is when the actuator of the Cutter switch is not pressed by the cam on the Cutter gear.

> If the actuator of the switch is pressed, the Cutter motor activates and rotates the Cutter gear until the actuator is released from the cam.



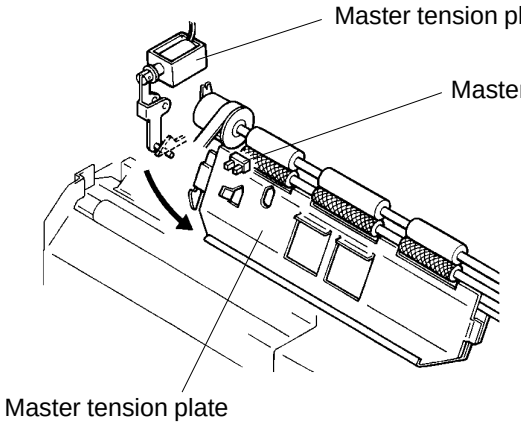
Cutter Home Positioning Timing Chart

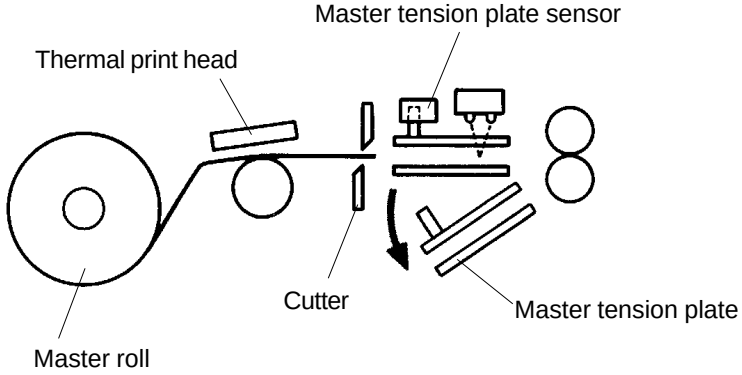


① If the Cutter position SW is released from the beginning (Cutter already at Home position), the Cutter home positioning movement is skipped.

② If the light path of the Master tension plate sensor is closed (Master tension plate is up) when the Cutter home position movement starts, the Master tension plate solenoid is activated to drop the Master tension plate and then Cutter home position movement takes place.
If the light path of the Master tension plate sensor does not open (Master tension plate does not drop down), the machine indicates Cutter motor lock error message **[E 13]**.

③ If the Cutter position switch is pressed (cutter not at Home position) even though **450 ms** has passed after the Cutter motor activated, the machine assumes Cutter motor has locked and indicates error message **[E 13]**.





2. Cutting Mechanism

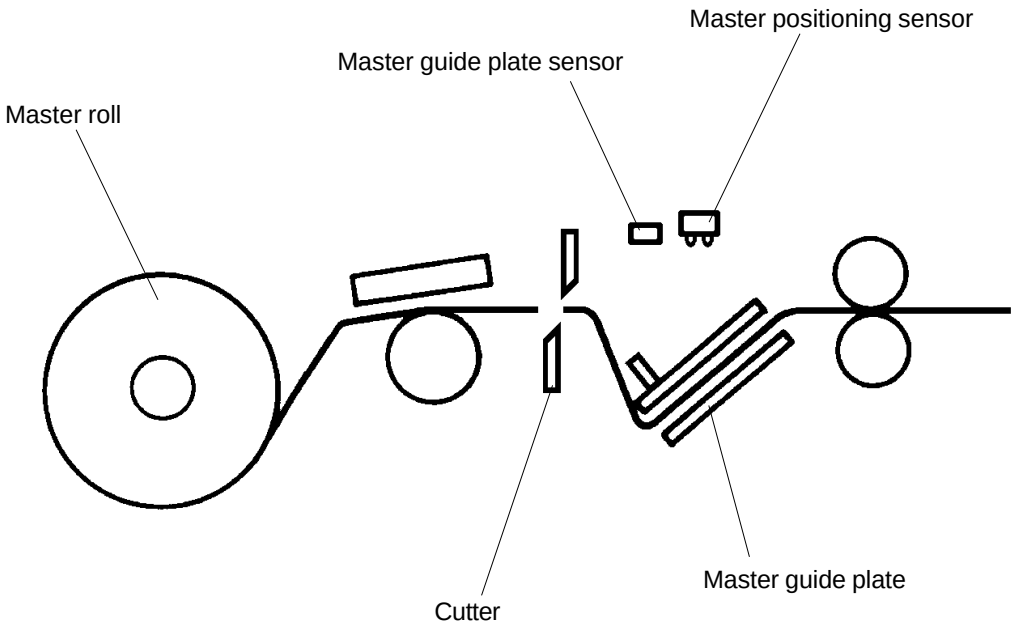
1. Master Cutting

> Cutter motor activates and cuts the master each time the master loading is made on the Drum.

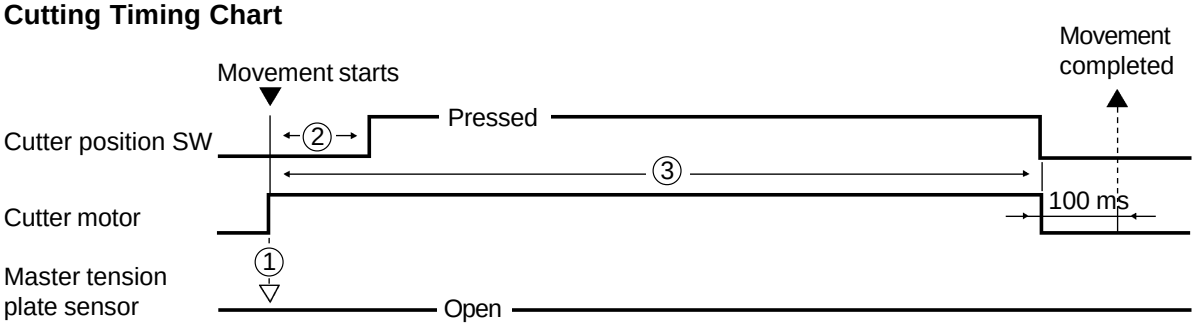
2. Cutter Motor

> As the Cutter motor activates, it rotates the Cutter gear, and the high part of the cam on the Cutter gear presses against the actuator of the Cutter switch.
The Cutter motor continues to rotate until the low cut portion of the cam releases the actuator.
The Cutter motor then stops and the cutting motion ends.

> The Cutter motor does not activate unless the Master tension plate is down (light path of the Master tension plate sensor is open).



Cutting Timing Chart



① If the light path of the Master tension plate sensor is blocked (Master tension plate up) at the start of the master cut movement, the Cutter motor will not activate.
The light path of the Master tension plate sensor must be open (Master tension plate must be down) for the normal Cutter operation.
[C 23] is indicated after the master loading on the Drum movement is completed to indicate master cut malfunction.

② If the Cutter position switch is not pressed within **75 ms** after the Cutter motor activates (the Cutter does not move from the Home position), the machine assumes the Cutter motor has locked and indicates error message **[E 13]**.

③ If the Cutter position switch is pressed (cutter not at Home position) even though **450 ms** has passed after the Cutter motor activated, the machine assumes Cutter motor has locked and indicates error message **[E 13]**.